ATOMIC ENERGY newsletter

THE FIRST AND ONLY ATOMIC NEWS SERVICE

ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

August 26th, 1952
Vol. 8...No.1

Dear Sir:

To exploit deposits of pyrochlore occurring in Nigeria, and which contain uranium, a combine to be known as the Uganda Development Corporation has now been formed. Included in the combine are Rio Tinto Mines, Monsanto Chemical, and Frobisher Mines. While the deposits are very low in uranium content (120 grams of uranium per ton was the Geological Survey of Great Britain's estimate) it is significant that experiments had been in progress at the Atomic Energy Rsearch Establishment, Harwell, England, to find an economic means of extracting the uranium. The pyrochlore is now to be exported to the United States. Other content of the pyrochlore, niobium oxide, occurring as 2,600 grams per ton, is of value as alloying ingredient for high-temperature-resisting metals. (Other MINERAL news, pge. 4 this LETTER.)

Lindsay Chemical Co., (formerly Lindsay Light & Chemical Co.) the foremost U.S. supplier of thorium nitrate to the U.S. Atomic Energy Commission, and the largest U.S. purchaser of monazite sands (from which it extracts the thorium), will undertake a major expansion of its facilities for producing rare earth chemicals. A $1.8 million, 70,000-square foot addition is to be added to the company's present plant site in West Chicago. Local and Federal plant dispersion planners have approved the site. Rare earths will be used in Lindsay chemicals which it supplies its industrial customers, primarily in the steel industry. (Other BUSINESS news, pge. 2 this LETTER.)

Two new generating plants, that will cost $400 million, and will furnish 2.2 million KW of power, will be built by Ohio Valley Power Corp., a 15-company utility group, for the new uranium-235 production plant to be erected in Pike County, Ohio. One plant will be built near Portsmouth, Ohio, by Ebasco Services, Inc. Four 200,000 KW steam generating units, largest of their kind, will be installed to give the plant a capacity of 800,000 KW. The second plant will cost $280 million and will produce 1.4 million KW of power. It will be located in southeastern Indiana near the Ohio and Kentucky borders. (New ATOMIC PLANT, pge. 3 this LETTER.)

For the treatment with gamma rays of deep-seated cancers, a cobalt-60 teletherapy unit has been purchased by Montefiore Hospital, New York, with a grant of $50,000 from the New York Foundation. The cobalt-60 was produced in the high-flux Canadian nuclear reactor, at Chalk River, Ontario. Another cobalt-60 source, also from the Chalk River establishment, is destined for the University of Texas-M.D. Anderson Hospital, Houston. It was loaded into the therapy mechanism at Oak Ridge, Tenn., and is now being tested; it is an 800-curie source. (Other PRODUCT news, pge. 4 this LETTER.)

A symposium on nuclear chemistry, at the 122nd National meeting of the American Chemical Society, Atlantic City, N.J., Sept. 14-19, will hear Samuel Glasstone discuss The Role of Chemistry in Nuclear Energy; Glenn T. Seaborg, on the Transuranium Elements; M. Calvin, on Isotope Studies on Photosynthesis; and others.

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BUSINESS BRIEFS...in the nuclear field...

Distribution of U.S. Atomic Energy Commission Spending Shown: Figures recently revealed now show that from July 1st, 1950 to April 30th, 1952, USAEC contract awards amounted to approximately $1.9 billion dollars. Of this amount, $78 million, or 4% of the total, was placed directly with small business firms. Since the USAEC's construction programs and operations of major facilities are carried out by cost-plus fixed-fee contractors, sub-contracts let by them must also be taken into account. These sub-contract figures show that during the period mentioned (July 1st, 1950 to April 30th, 1952), USAEC subcontract awards by all cost-plus contractors amounted to $1.4 billion. Of this amount $416 million, or 30% of the total, was awarded to small-business firms, and some $948 million, or 69% to larger business firms. (Small business, as used here, is the Government term for an operation with less than 500 employees.)

New High Reached: Increases in both sales and profits for the nine months ending May 31st, 1952, as compared with a similar period in the previous year, have been registered by Nuclear Instrument & Chemical Corp., Chicago, according to that firms's financial statement. For the nine months ending May 31st, 1952, sales totaled $838,607.00, as compared to $590,555.00 for the same months of the preceding year. Nuclear, one of the pioneers in the field of instruments and allied products for radiation detection and radioisotope applications, has a current backlog of orders in excess of $1,500,000. These represent contracts with both government and private industry.

Nuclear Powered Submersible Manufacturer Reports High Earnings: General Dynamics Corp. (formerly Electric Boat Co), whose Electric Boat Division, at Groton, Conn., is building the nuclear powered submarine hulls for the U.S. Navy, has reported a net income for the year ended June 30th, 1952 of $2,091,000. This is a 70% increase over the corresponding period for 1951. (While the nuclear activities of General Dynamics represent, of course, but a very small fraction of the firm's $50 million sales for the year ended June 30th, 1952, this company is believed to be the only boat builder engaged in such activities.)

Land Speculation Rife at New Atomic Installation Site: Within three hours of the official announcement that a new atomic installation (pge. 3, this LETTER) would be constructed in Pike County, near Waverly, Ohio, property values were being bid up by speculators who descended in full force there. Since no "atomic city" will house the plant workers, and a large construction force will need shelter, the area is particularly attractive to trailer court operators, pre-fabricated unit erectors, and other low cost mass housing operations. The situation will in all likelihood parallel Paducah, Ky., and other areas, notably the Savannah River operation, where atomic plant erection has created unprecedented business booms.

New Zirconium and Hafnium Plant: Some $2,443,000 will be spent by the Carborundum Corporation to build its new plant for the production of zirconium and hafnium sponge metals, that firm has now stated. A subsidiary, Carborundum Metals Co., Inc., has been formed to produce the metals; under a USAEC contract, the Commission will buy Carborundum's 150,000 lbs per year output of the metals for a 5-year period at a guaranteed price (this LETTER, June 3rd, 1952, pge. 2). Site of the new plant will be just outside the village limits of Akron, which is thirty miles southeast of Niagara Falls, N. Y.

PEOPLE...in nuclear energy activities...

Raymond C. Daly has been elected a vice president of George A. Fuller Co., that building construction concern announced last week. Daly is project manager of Fuller's atomic energy plant construction at Fernald, Ohio.

G. Gilbert Goss, development engineer in electronic circuitry at Oak Ridge National Laboratory for the past 4½-years, has joined Radiation Counter Laboratories, Skokie, Ill., nuclear instrument manufacturer, as Director of Electronic Research.

Paul N. Rasmussen has now been appointed Director, Division of Organization and Personnel, of the USAEC's New York Operations Office.

AT ATOMIC CENTERS...new construction activity...

New Plant Site Announced: Pike County, Ohio, about 22-miles north of Portsmouth, Ohio, will be the site of the USAEC's new gaseous diffusion plant for the production of uranium-235, the Commission has now announced. (The announcement set off the usual land rush attendant to atomic plant site selection; pge. 2, this LETTER.) About 6,500-acres of land will be acquired. While funds for the new project were made available to the USAEC July 15th of this year (in its annual budget) possible locations had been studied for several months. The potential availability of power at reasonable cost in quantities needed for operation of the plant, and availability of water, were criteria influencing selection of the site. Preliminary design calls for a plant estimated to cost about $1.2 billion. It will require up to 400,000 KW of power for early operation; this will be supplied from existing facilities. In addition, new power plants will be built to furnish the maximum of 1,800,000 KW needed when the entire plant is in operation. Although portions of the plant will be placed in operation as soon as completed, construction of the plant as a whole is scheduled to take about 4-years. A peak of about 30,000 workers will be necessary for a short period. Except possibly for one year, average construction employment is not expected to exceed 17,000. As has been the case at all new installations of the USAEC in the past two years, (National Reactor Testing Station, Arco, Idaho; Savannah River Plant, S. Carolina; and the gaseous diffusion plant, Paducah, Ky.) there will be no USAEC-built and operated community. Direct supervision of the construction and operation of the new plant will be under a new Portsmouth Area Office which will be established by the Oak Ridge Operations Office of the USAEC. Kenneth A. Dunbar is to be area manager, and R.H. McCulloh deputy area manager. Local offices will be opened in Portsmouth in the near future. The principal construction contractor for the new plant is Peter Kiewit Sons' Company, Omaha, Nebraska. The concerns which have been so far scheduled to handle the various phases of design and architectural work include: Union Carbide and Carbon, New York; Sargent and Lundy, Chicago; Singmaster and Breyer, New York; Smith, Hinchman and Grylls, Inc., Detroit; Burns and McDonnell, Kansas City, Mo.; Holabird and Root and Burgee, Chicago. The USAEC has declared that competitive bid and fixed price contracts will be used to the fullest extent practicable.

Hanford Plutonium Works Expansion: Headquarters at Richland, Washington, have been set up by Kaiser Engineers Div., Henry J. Kaiser Co., to initiate work on a major construction contract involving expansion of the Hanford Plutonium works. Actual construction work by Kaiser is scheduled to begin late this Fall, with hiring of construction workers starting about October 15th. Kaiser Engineers has stated that sub-contracts will be let for certain phases of the work. Electrical installations will be sub-contracted to Foothill Electric Corp., Oakland, Calif., which has just completed the electrical installation for the expansion of Kaiser's aluminum reduction plant at Spokane, Wash. Resident manager at Richland for Kaiser Engineers will be John H. Tacke, who has been with Kaiser since 1931.

Prototype Aircraft Nuclear Reactor Work Starts: The first two construction projects at the National Reactor Testing Station, Arco, Idaho, in connection with the $33 million prototype aircraft nuclear propulsion reactor operation there, are about to start, with advance notice given to contractors on electrical and other contracts to be let. The site for the new plant, the USAEC has now announced, will be north of the present construction area, at the Testing Station.

NEW BOOKS & OTHER PUBLICATIONS...in the nuclear field...

Decay of Radioactive Mixtures, by Hugh R. Lehman and Robert H. Lynch, An interim report of work done at the radiological division of the Army Chemical Center, Md., in which equations predicting the time of maximum fractional activity for a nuclide of a radioactive mixture have been derived. (In the case of a mixture of fission products, most activities will "peak" at approximately 1.7 half-lives from the time of fission.) 16-p.--Photoduplication Section, Library of Congress, Wash., D.C. (Microfilm, $1.75; photostat, $2.50)

NEW PRODUCTS, PROCESSES & INSTRUMENTS...in the nuclear field...

Portable scintillation counter, model 111; called the Scintillator. Recommended by the manufacturer for prospecting, civil defense, and scientific use: said to be usable from aircraft and moving surface vehicles. The entire instrument is contained in the probe of the apparatus, which is waterproof and tropicalized. Ranges of the instrument are .05, .5, and 5 milliroentgens per hour; said to be accurate within 5% of 3/4 full scale reading. In conjunction with the probe, the battery box is carried on the user's belt and weighs less than 4-lbs.--Precision Scientific Co., Los Angeles 16, Calif.

NOTES: Radioactive compounds produced in Great Britain are now to be distributed in the United States by Nuclear Instrument & Chemical Co., Chicago, under an agreement recently signed between Nuclear and the British Ministry of Supply. Of interest, is that this is the first commercial agreement of its nature to be enacted in the field of radioactive compounds. Dr. F. E. Kelsey, of Nuclear's chemisty department, will handle the technical details associated with the techniques and uses of the new compounds. Nuclear's president, James Schoke, feels that "the addition of this new line of (British) chemicals will widen the area of research efforts in this country".

A service which specializes in performing services for industries and universities desiring engineering calculations of a high degree of complexity and the treatment of related mathematical problems in the field of atomic physics has now been established. It is known as Mathematical Computing Service, 105 Court St., Brooklyn, N. Y. An important function of the group is the mathematical formulation and complete solution of a problem from given physical data. The staff consists of consultants holding doctorate degrees who are said to be qualified to treat problems in applied mathematics relating to the physical sciences.

RAW MATERIALS...radioactive mineral workings & new discoveries...

CANADA:-What appears to be an important new uranium find has caused considerable interest in the Athabaska uranium area. The find, in which Gunnar Gold Mines has a controlling interest, is located in the center of a 12-claim group at St. Mary's Channel, on the north shore of Lake Athabaska, about 20-miles southwest of Eldorado's mines at Beaverlodge. The occurrence, which is said to be quite different from anything heretofore turned up in the area, is believed to have considerable potentialities by uranium people who have seen the find. Preliminary work has shown intense radioactivity across widths up to 500-ft. The radioactivity occurs in a porous or honeycombed rock. Because of its ideal location, and mining conditions, company officials feel that low minings costs would make even a grade of less than 0.10% profitable.....Tying on to this new Gunnar discovery, Nesbitt LaBine Uranium Mines has staked a block of claims in this St. Mary's Channel sector of the Lake Athabaska area. Immediate assessment work is planned on the several occurrences of pitchblende already discovered on this ground. All told, the company has acquired three new and separate groups of claims since Spring. At Shannon Lake, assessment work has disclosed new shows of pitchblende; geological mapping is currently under way. On the company's main Ace group, underground development continues to show encouragement on the two levels being opened, according to Mr. LaBine. On the A.B.C. group of the company, drill holes have all returned values, the company states.

ALASKA:-An interim report on the uranium possibilities of Alaska, following a 5-year survey of the territory (1945-50) by the Alaskan geology branch of the U.S. Geological Survey, on behalf of the USAEC, summarizes the mineral occurrences in Alaska and indicates which are more favorable for the occurrence of uranium. Titled "Interim Report on an Appraisal of the Uranium Prospect of Alaska", the report can only be inspected at the Geological Survey offices in Washington, San Francisco, and Alaska; it is not available for distribution. However, a brief summary of a preliminary report of uranium possibilities in certain areas of Alaska is available. This covers work done in 1951 in southeastern Alaska, Gulf of Alaska, Alaskan Railroad, and Seward Peninsula regions. Free copies of the report titled "Preliminary Summary of Possibilities for Uranium in Alaska, 1951, "are available from the Geological Survey, Washington 25, D. C.

ATOMIC PATENT DIGEST...latest U.S. grants...

Preparation of radioactive bromine. In part, a method of preparing active bromine gas from a non-volatile bromide salt containing active bromine. Comprises mixing this salt with an anhydrous, relatively volatile metal bromide which ionizes in the molten state, fusing the volatile metal bromide at a temperature sufficient to vaporize part of it, bringing the vaporized bromide into contact with natural bromine gas, and separating the bromine gas. U. S. Pat. No. 2,605,219 issued July 29th, 1952; assigned to United States of America (USAEC).

Electronic analyzer. A system for determining the magnitude distribution of a series of events. Comprises, in part, a translator for converting the events into electronic impulses; a pulse integrator, fed by the translator, for producing and sustaining a signal corresponding to the magnitude of each of these pulses; an indicator for reproducing the signals from the integrator; and means responsive to these pulses for controlling the operation of the indicator and for restoring the integrator. U. S. Pat. No. 2,605,332 issued July 29th, 1952; assigned to United States of America (USAEC).

Diffusion preventing device for X-rays. A diffusion-preventing grid for X-ray practice. Comprises, in part, a plane plate of uniform thickness of a substance permeable to X-rays. This plate has formed in one of its faces a series of parallel, uniformly spaced fine grooves of uniform depth, which are less than the thickness of this plate, the spacing of these grooves being less than 0.4 mm. A substance impermeable to and absorptive of X-rays fills these grooves. U. S. Pat. No. 2,605,427 issued July 29th, 1952, to Roger Andre Delhumeau, Saint-Mande, France.

Portable radiation survey instrument. Comprises, in part, an ionization chamber circuit provided with a voltage supply; amplifying means having an input circuit connected in series with a portion of this ionization chamber circuit and with an output circuit producing an output voltage varying with the amount of ionization occurring in this ionization chamber; and other circuitry. U.S. Patent No. 2,605,429 issued July 29th, 1952; assigned to United States of America (USAEC).

Pulse generator. In part, the combination comprising a pair of gaseous discharge tubes; an artificial transmission line connected between the anodes of the tubes for storing energy; a pair of resistance-capacitance integrating networks having a common variable input connection and separate outputs; and means for charging this line whereby the conduction of the tubes is controlled to discharge the line in response to a square wave of voltage at the input connection and to produce an output voltage of variable duration at one of the tube's cathodes. U.S. Pat No. 2,605,449 issued July 29th, 1952; assigned to United States of America (USAEC).

Insulator testing apparatus. Comprising, in part, an audio oscillator; a sawtooth oscillator connected to this audio oscillator, and frequency modulating its output signal; and associated circuitry whereby a trace of the resonant curve of the insulator under test is produced. U.S. Pat. No. 2,605,833 issued August 5th, 1952; assigned to United States of America (USAEC).

Deaerating system for water or steam condensate. Comprising, in part, a container with a deaerating chamber and a liquid storage chamber; means whereby liquid reaching a predetermined level in the deaerating chamber will drain into the storage chamber; and means responsive to the liquid level in the deaerating chamber for connecting the storage chamber with the circulating system and for supplying liquid to it. U. S. Pat. No. 2,605,856 issued August 5th, 1952; assigned to United States of America (USAEC).

Method and apparatus for material separation. Apparatus for separating materials of slight mass differences, such as isotopes. U. S. Pat. No. 2,606,291 issued August 5th, 1952; assigned to United States of America (USAEC).

Sincerely,

The Staff
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